



2008 Action Summit

Innovation, Entrepreneurship & Renewable Energy

Congressman Nick Lampson
Honorary Summit Chair

January 7, 2008
Pearland, Texas



www.publicforuminstitute.org

SUMMARY

U.S. Congressman Nick Lampson, in his first summit with the Public Forum Institute, drew attention to greater Houston's potential for economic growth. The 2008 *Action Summit: Innovation, Entrepreneurship and Renewable Energy*, convened in Pearland, Texas, highlighted broad strategies in Education, Entrepreneurship, Renewable Energy, and Smart Growth to best effect regional economic development in the Houston metropolitan area. Houston's urban economy is based extensively in energy, manufacturing, aeronautics, and technology. Broad, comprehensive policies that carefully consider all circumstances and possible consequences---that collectively define a vision---will enable the region's industries to plan for a thriving economic future. As a result of the summit, coalitions have been formed to guide the policy-making process forward in line with community goals and values.

Summit Preparations

Prior to the summit, Congressman Lampson established working groups to explore solutions for economic growth. Representatives from businesses, educational institutions, economic development organizations, non-profits, local governments, and the community met in two volunteer work group sessions to discuss and debate the region's future challenges. The first session identified topics for the summit; the second developed a preliminary set of recommendations for summit participants to evaluate during breakout group sessions.

Process

Local experts from these working groups presented white paper recommendations, then led one-hour breakout discussions for each topic in order to better prioritize these recommendations. This provided a focused voting process at the conclusion of the summit. In support of this process, an interactive technology called eFORUM was used to collect real-time feedback from participants and identify action plans. Using eFORUM electronic keypads, participants were asked to rank recommendations in terms of possible impact, from highest to lowest on a scale from 1 (low) to 10 (high). Each session aimed to build consensus, clarify priorities, and focus on a smart and sustainable economic growth policy.

Top Summit Recommendations:

- Creating and promoting a region-wide strategy or roadmap to direct prospective entrepreneurs to key support groups and resources, this is a two way street.
- Support the Houston-Galveston Area Council's 2035 Regional Transportation Plan by enabling communities to plan and implement around smart growth principles.
- Promote innovation through research and development through partnering between the private sector, universities and governmental research agencies. Additionally encourage technology transfer and domestic manufacturing and engineering to ensure jobs and resources benefit local communities.
- Federal government should be facilitators, not creators - offering incentives for business participants in education of students. Get them involved through outreach, communication and involvement in apprentice and education venues. Focusing on critical skills, integrated, operation and organizational topics.

Entrepreneurship and Smart Growth

On Monday, January 7, 2008, summit participants convened in roundtable discussions of entrepreneurship and smart growth. Working group members noted that Houston, with its industrial economic base, can grow significant technology and commercial jobs, especially in

renewable energy and entrepreneurship. After an hour of discussion and debate, the highest-ranked recommendation regarding entrepreneurship involved the promotion of a region-wide “roadmap” directing prospective entrepreneurs to key support groups and resources. In terms of its impact, the entrepreneurship roadmap scored an average response of 8.0 on the eFORUM keypad scale. The Galveston Area Council’s 2035 Regional Transportation Plan, which would support community planners’ use of smart growth principles, gained the highest ranking in the smart growth category with an average favorable response of 7.7.

Renewable Energy and Education

In separate sessions, summit participants covered renewable energy and education. Energy efficiency, pollution, and climate change are concerns not just in Texas, but nationwide. To help identify promising opportunities for businesses to use renewable energy, working groups presented ideas that sought to develop new partnerships between business and policy makers and to conserve energy and promote economic growth by rewarding businesses with lower carbon “footprints.” Various incentives—from tax credits to cap and trade systems—were explored. A majority in the roundtable discussions of renewable energy ranked “partnership,” or cross-sector involvement, the highest, at an average of 8.2. This recommendation promotes innovation through research and development, forming partnerships between the private sector, universities, and government research agencies.

Some members of the working groups proposed the creation of a governmental Public Renewable Energy Awareness Program to better educate the public on alternative energy sources and energy-saving strategies. After eFORUM results for these two topics were tallied, the highest-scoring recommendation for education, at 7.8, involved federal government incentives for businesses to invest in student participation and apprenticeships. Participants frequently mentioned the need for workforce development through education, especially in the fields of science, technology, engineering and mathematics. It was felt by some that an emphasis on sustainability could serve as a link between business, informed consumers and the government.

Conclusion

The Houston metropolitan area must revitalize in order to thrive, and with this summit, the community has provided guidance to the best ways for the region to grow. Local, state, and federal governments, in cooperation with key supportive organizations, now need to act upon these citizens’ comments, which focused on cross-sector collaboration and partnerships among government, education, and renewable energy businesses combined with comprehensive plans for entrepreneurship and smart economic growth.

The 2008 Action Summit closed on a promising note. At Congressman Lampson’s suggestion, summit working group chairs will help to coordinate a task force to further act upon consensus-based recommendations. Attendees -- business and community leaders, local elected officials, municipal stakeholders, and the general public -- will develop realistic and sustainable goals for Houston’s future progress.

Entrepreneurship

Recommendations -- (average response on a 10-point scale assessing impact; 1=lowest; 10=highest)

Creating and promoting a region-wide strategy or roadmap to direct prospective entrepreneurs to key support groups and resources, this is a two way street. (8.0)

Identify sources of funding, both private and public, and promote access to capital and benefits for employers and their workforce. (7.9)

Linking entrepreneurship to career planning in middle and high school, and promote highly ranked entrepreneurship programs such as those provided at the Bauer College at the University of Houston and promote the culture of entrepreneurship. (7.7)

Work with organizations such as the National Technology Transfer Center, University of Houston, the Texas Medical Center, Houston Technology Center and other organizations that can facilitate the transfer of home grown technology and applications and assist in commercialization efforts and problem solving. (7.6)

Advance new technology commercialization paths that capitalize on our regional advantages and deliver technology innovation and convenience to consumers while diversifying and growing our regional economy. (7.0)

Find prominent local business mentors that lend operational credibility to new ventures and reassure venture partners of operational prowess. (6.3)

Improving the Greater Houston Economy through Entrepreneurship

White paper report for 2008 Action Summit – Pearland, TX

Introduction

Average Response Scale Per Recommendation

Starting up a new business in today's economic climate can be challenging and exciting. It can also be frustrating and exasperating. What part do these new businesses play in our local economy? Can they help improve the local economy and what is standing in the way? The 2008 Action Summit is a forum for honest discussion, debate and consensus building on the most pressing issues facing new business development and growth. Through this process we will look at the importance of entrepreneurs to our local economy, the significant challenges facing this sector of the economy and the leadership efforts that can be applied to produce positive results for the regional economy.

Entrepreneurship Working Group Members:

Perri D'Amond, Greater Fort Bend Economic Development Council
Working Group Chair

Michael Moore, San Jacinto College Small Business Development Center
Working Group Member

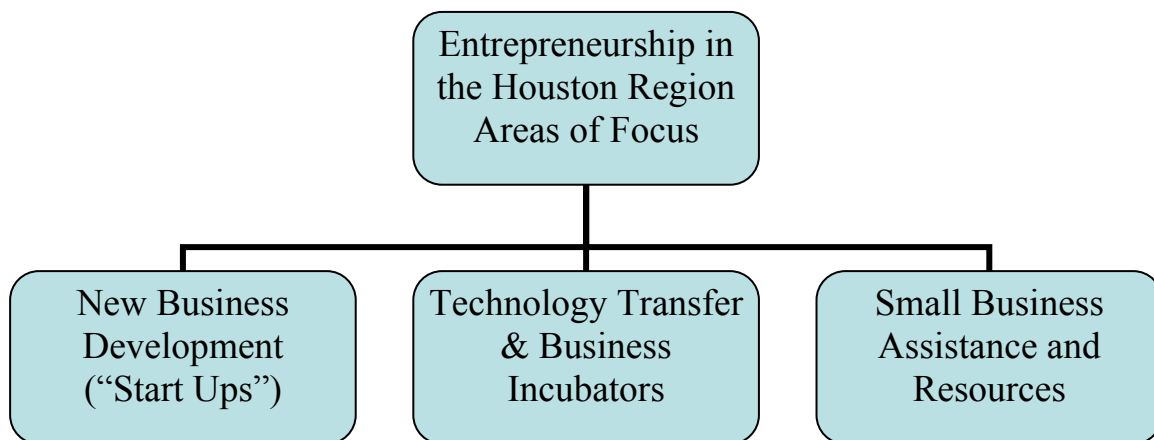
Regina Morales, City of Sugar Land
Working Group Member

Dale Rudick, City of Sugar Land
Working Group Member

The Business Climate

Small Businesses are the heart of Texas's economy. Research by the Office of Advocacy shows that small businesses create most of the nation's net new jobs, and they bring dynamic ideas, innovative services, and new products to the marketplace. New business creation is a significant factor to a region's ability to increase its gross product, personal income, and employment. (SBA, 2007)

Yet, while the importance of small business is established, the resources and guidance available to coordinate, assist and accelerate the success and growth of small business is often a mystery to those most in need. As practitioners in economic development, educational institutions and facilitators of small business development and through interaction with specific small businesses and early stage companies, a number of areas are being advanced for discussion at the summit to enhance our region's efforts to stimulate entrepreneurial activities. They can be broadly identified as:



New Business Development

Regional business development is first and foremost about expanding the number of entrepreneurs throughout the region and helping new businesses find their footing to overcome market entry barriers. Among the most compelling issues facing early stage growth companies are:

- Protection of Intellectual Property
- Business Plan Mentoring, Review and Assistance
- Funding and Access to Capital
- Availability of Management Talent and Operational Credibility
- Access and Entry to Markets
- Establishing a Track Record of Product /Service Delivery
- Provision and Simplification of a Start Up Road Map and Local Directory of Services
- Networking assistance

Potential responses identified to assist companies locally include:

- Creating and promoting a region-wide strategy or roadmap to direct prospective entrepreneurs to key support groups and resources (SBDC Network, SBA, SCORE, IP Expertise, Angel Networks, etc.) that can teach skills, improve success rate, and assist with starting up new businesses

- Developing a region-wide awareness of the importance and impact of small businesses
- Usage of cities, counties, EDCs, and utilities to send a coordinated message to encourage starting a new business as a career and the guidance for providing assistance
- Building a pool of seed and venture capital suppliers for start-up and very early stage businesses not often financed by traditional sources
- Promoting continuation and expansion of state of Texas Emerging Technology Programs and federal programs to increase funding for early stage companies
- Finding prominent local business mentors that lend operational credibility to new ventures and reassure venture partners of operational prowess
- Celebrating successes of small businesses through a region-wide awards or recognition program
- For the longer term, linking entrepreneurship to career planning in middle and high school, and promote highly ranked entrepreneurship programs such as those provided at the Bauer College at the University of Houston.

Technology Transfer

Technology transfer involves moving a technology developed for one organization or environment into another. Often this movement is from a federal or university laboratory into a commercial operation, capitalizing on the investment in research and development that was initially directed to government use or to the advancement of science. (NTTC website)

As the home of NASA and the Johnson Space Center, the University of Houston, the Texas Medical Center, Houston Advanced Research Center and the Research Partnership to Secure Energy for America, Houston holds a unique position as a location housing expertise and resources that have produced or have the potential of producing significant technology and commercial application.

The region needs to collectively work together to:

- Advance new technology commercialization paths that capitalize on our regional advantages and deliver technology innovation and convenience to consumers while diversifying and growing our regional economy.
- Work with organizations such as the National Technology Transfer Center, University of Houston, the Texas Medical Center, Houston Technology Center and other organizations that can facilitate the transfer of home grown technology and applications and assist in commercialization efforts and problem solving
- Facilitate access, understanding and use regionally of federal funding opportunities related to the Small Business Innovation Research (SBIR) and Small Business Technology Transfer Programs both subject to federal reauthorization in FY08 (current fiscal year budget) and FY09 (next fiscal year budget), respectively
- Facilitate access, understanding and use regionally of state funding sources including the Emerging Technology Funds, subject to reauthorization in the 81st Texas Legislative Session beginning in January 2009.

Business Incubation

Business incubation is a business support process that accelerates the successful development of start-up and fledgling companies by providing entrepreneurs with an array of targeted resources and services. These services are usually developed or orchestrated by incubator management and offered both in the business incubator and through its network of contacts. A business incubator's main goal is to produce successful firms that will leave the program financially viable and freestanding.

Critical to the definition of an incubator is the provision of management guidance, technical assistance and consulting tailored to young growing companies. Incubators usually also provide clients access to appropriate rental space and flexible leases, shared basic business services and equipment, technology support services and assistance in obtaining the financing necessary for company growth. (National Business Incubation Association web site)

According to the NBIA, start-up companies in incubators have a higher success rate than those developing without the critical business assistance provided by incubators:

- More than 65 % of incubator-based early-stage companies are likely to receive third party financing, compared to less than 10 % of early-stage companies not based in an incubator
- 87 % of incubator graduate companies remain in business after three years, compared to just half of non-incubator start-ups
- And 84 % of those incubator graduates remain local to their incubator

Services typically seen in business incubators include:

- Pre-Admission Consulting
- Access to university/college resources including research collaboration opportunities, student interns, MBA student support teams, etc.
- Business planning & milestone tracking
- Product, marketing & manufacturing strategy support
- Prototyping, software, web development
- Legal advice on governance, IP, licensing, corporate law, deal structuring
- Finance and accounting support
- Government agency navigation & grant support
- Seed Funds for milestone specific projects
- Entrepreneurs in Residence
- Virtual membership for non residential clients
- Networking opportunities with Angel venture capitalists and other emerging business

(Source: State of New Jersey Commission on Science and Technology)

Presently there are two members of NBIA listed in Houston, the Houston Technology Center and the Entrepreneurial Development Center.

- Does it make sense to support more wide spread development of business incubators in the region or forge alliances that bring the benefits of existing incubators to the entire region?
- Does it make sense for the state to help support the creation and financial support of regional incubators like other states have (e.g. New York, New Jersey)
- Is this a function of the private sector, public sector or a public private partnership?
- Should our academic institutions be taking a lead in the development and outreach of incubators for the benefit of the university, region and state?

Small Business Assistance and Resources

In addition to promoting the next wave of entrepreneurs, our regional economy is vested in the success and growth of existing small businesses. Many of the same challenges exist for small business as for start up companies such as:

- Access to affordable capital

- Lack of collateral to support financing
- Angel financing at early business stages
- Tax or other incentives linked to performance or creating job
- Hiring, training, and retaining employees
- Affordable health and other key benefits for employer and employees
- Inability to maximize use of technology in the business
- No integrated internet strategy for the business
- Time management – finding the time to learn and expand critical new skills
- How to select and use professionals (Attorneys, CPAs, etc.)
- Succession planning

Conclusion

The Action Summit is an opportunity to find ways to address these areas and identify other areas that can bring meaningful positive results to small business development, job creation and infrastructure. Through discussion of these and other areas affecting entrepreneurial growth, we believe a road map will emerge that will further encourage and attract small business development in the region and bind the community together for more effective cooperation and opportunity.

Smart Growth

Recommendations -- (average response on a 10-point scale assessing impact; 1=lowest; 10=highest)

Support the Houston - Galveston Area Council's 2035 Regional Transportation Plan by enabling communities to plan and implement around smart growth principles. (7.7)

Focus on developing and revitalizing existing cities and towns. (7.7)

Urge the State to develop a Smart Growth Development Plan. (7.6)

Strengthen regional partnerships at many levels, beginning with broad issues that have no political boundaries. (7.5)

Seek planning authority for area counties. (7.0)

Improving the Greater Houston Economy through Smart Growth

White paper report for 2008 Action Summit – Pearland, TX

Introduction

As our region prepares to add 3.5 million people by 2035, we must find ways to maintain and improve quality of life for existing and future residents. If we accept that some rapid growth is inevitable, we must be smart about how we grow.

People in the region are concerned about many issues that are the result of growth policies. Many of these issues, but by no means all, relate to the environment. Citizens in a variety of public planning processes want preservation of green space and floodplains, more convenient communities, less travel and more travel options, and preservation of existing neighborhoods or rural character.

There is a widespread view that these outcomes don't necessarily concur with the policies advocated by elected and other public officials. Further, there is increasing understanding that these outcomes can only be achieved through what is known as smart growth.

Smart growth is based on a well-developed set of principles that now drive new development and redevelopment in most regions of the United States. It is a subset of "sustainable development," a concept that is about ensuring that communities and regions accommodate growth in ways that are economically

Smart Growth Working Group Members:

David Crossley, Gulf Coast Institute
Working Group Chair

Matt Aust, City of Sugar Land
Working Group Member

Coletta Castleschold, BayTran
Working Group Member

John Farro, Ferro Land Investments
Working Group Member

George Guillen, University of Houston Clear Lake
Working Group Member

Mike Ogden, BayTran
Working Group Member

Jeff Taebel, Houston-Galveston Area Council
Working Group Member

Geri Wells, Gulf Coast Institute
Working Group Member

sound, environmentally sustainable, and socially responsible, while meeting the needs of the present without compromising the needs of future generations.

Objectives

To achieve these objectives, the Smart Growth Network¹ and others have developed a set of ten basic principles:

1. Mix land uses. New, clustered development works best if it includes a mix of stores, jobs and homes. Single-use districts make life less convenient and require more driving.

2. Take advantage of existing community assets. From local parks to neighborhood schools to transit systems, public investments should focus on getting the most out of what we've already built.

3. Create a range of housing opportunities and choices. Not everyone wants the same thing. Communities should offer a range of options: houses, condominiums, affordable homes for low-income families, and "granny flats" for empty nesters.

4. Foster walkable, close-knit neighborhoods. These places offer not just the opportunity to walk—sidewalks are a necessity—but something to walk to, whether it's a corner store, the transit stop, or a school. A compact, walkable neighborhood contributes to peoples' sense of community because neighbors get to know each other, not just each other's cars.

5. Promote distinctive, attractive communities with a strong sense of place, including the rehabilitation and use of historic buildings. In every community, there are things that make each place special, from train stations to local businesses. These should be protected and celebrated.

6. Preserve open space, farmland, waterways, natural beauty, and critical environmental areas. People want to stay connected to nature and are willing to take action to protect farms, waterways, ecosystems and wildlife.

7. Strengthen and encourage growth in existing communities. Before we plow up more forests and farms, we should look for opportunities to grow in already built-up areas.

8. Provide a variety of transportation choices. People can't get out of their cars unless we provide them with another way to get where they're going. More communities need safe and reliable public transportation, sidewalks and bike paths.

9. Make development decisions predictable, fair, and cost-effective. Builders wishing to implement smart growth should face no more obstacles than those contributing to sprawl. In fact, communities may choose to provide incentives for smarter development.

10. Encourage citizen and stakeholder participation in development decisions. Plans developed without strong citizen involvement don't have staying power. When people feel left out of important decisions, they won't be there to help out when tough choices have to be made.

¹ Smartgrowth.org

Summary

Essentially, smart growth encourages more compact development that uses less land and thus results in the need for less built infrastructure, thereby preserving green infrastructure. Evidence from multiple studies across the United States indicates that more compact development incorporating smart growth principles is more cost effective with respect to providing critical infrastructure to support development.

Benefits of a more concentrated growth pattern include enhanced economic competitiveness, preservation of open space and other natural resources, pollution reduction, and a healthier living environment and quality of life for residents.

Achieving these benefits requires an examination of how past and present public policies encourage inefficient and environment-degrading growth and what alternative policy strategies should be pursued to encourage more compact development patterns. Nothing impacts land use like transportation infrastructure, so that must be the first area of study.

In the transportation arena, for example, the external costs of growth through building of new highways into natural areas include increased congestion, lost opportunities for alternative transportation options such as transit, and increase in vehicle miles traveled. Increased vehicle miles traveled increases energy consumption, air pollution, roadway runoff that fouls water supplies, and leads to more rapid roadway deterioration.

Transportation planning in the eight-county Houston region is coordinated by the Houston-Galveston Area Council, which serves as the Metropolitan Planning Organization for federal funds. The primary tool for such planning is the Regional Transportation Plan (RTP), which looks several years into the future to form a framework for growth.

The current version, the 2035 RTP, for the first time proposes a framework for the future based on smart growth principles. It is also the first RTP to be based on citizen goals and values. The plan makes the case that "The strategy with potentially the most effect upon improving mobility and quality of life is the strategy of connecting transportation and land use."

Recognizing this relationship opens a new era of improving access to goods, people, and services for the purpose of improving the quality of life for all of the region's residents. The plan refers to current research about walkability, compact communities, self-contained neighborhoods and town centers, connections between centers via transit, and the reasons and strategies to protect the environment. However, despite the smart growth ideas in the plan, the bulk of the projects and the money are focused on increasing road capacity. The Houston region plans to spend more on roads than any other region in the United States. The narrative acknowledges that "many projects are already planned and programmed for the next ten years and any changes to the current scheduling of projects will not likely respond as quickly...." It warns that we may have to wait until 2015 before we begin to see the land use changes proposed in the plan.

One of the key strategies in the plan is called "Livable Centers," which is essentially about bringing smart growth principles to a large number of places across the region. The region has some 144 incorporated areas and these cities, towns, and neighborhoods are increasingly interested in the livable center concept, perhaps led by the examples of The Woodlands and Sugar Land, which have been leaders in this kind of planning.

Priority Action Items

1. Support the Houston-Galveston Area Council's 2035 Regional Transportation Plan by enabling communities to plan and implement around smart growth principles. As H-GAC attempts to bring the principles of the long-range plan to the short-range plan, there needs to be leadership and citizen action to encourage rethinking of several current projects that are designed to use green space, induce inefficient development, increase vehicle miles traveled, and require citizens to drive more every day. Further, the Livable Centers strategy needs more money and support from elected officials to enable a broad range of communities to plan and implement around smart growth principles. For this to become reality, political subdivisions must collaborate.

2. Focus on developing and revitalizing existing cities and towns. Sustainable prosperity for all our cities and towns will mean a higher quality of life for all citizens. Currently, a small majority of the region's citizens live in incorporated cities and towns, but forecasts show the majority of growth shifting to unincorporated areas. Since this dynamic is based on public policies that currently promote such growth, those policies should be re-examined. Municipalities have far more ability to plan for the future than do the unincorporated areas. Municipalities should be encouraged to develop comprehensive plans with a community vision for the future that provides for balanced growth that addresses the growth-inducing impacts of infrastructure investments. Incentives should be provided to communities to adopt plans and implementation strategies consistent with compact, mixed-use, pedestrian-oriented design, and these communities may, in turn, need to offer incentives to the market.

3. Strengthen regional partnerships at many levels, beginning with broad issues that have no political boundaries. Political and business leadership is needed to support the growing coalition that supports a more rationalized approach to the delivery of critical public and green infrastructure across the region. Leaders are needed to champion regional solutions to issues of regional interest and concern, such as air and water quality, mobility, and health care. A regional effort should be undertaken to set benchmarks for smart growth.

4. Seek planning authority for area counties. Unplanned growth is threatening quality of life, particularly in Harris, Fort Bend, Montgomery, and Galveston counties. Yet the counties have very little authority under state law to respond to this threat. Rural counties that want to retain their character and way of life are essentially helpless to do so, and will need some degree of new authority to achieve their plans.

5. Urge the State to develop a Smart Growth Development Plan. The State of Texas could have an enormous positive impact on quality of life if it were to adopt a strategic plan for future growth based on smart growth principles. The State essentially controls the quality and maintenance of our most critical natural and built assets, such as air, land, transportation, housing, water, and many others. The development plan should identify opportunities in existing state and state-administered federal programs that provide incentives for smart growth. Citizens can then begin to assess the total benefits of adopting smart growth principles.

Renewable Energy

Recommendations -- (average response on a 10-point scale assessing impact; 1=lowest; 10=highest)

Promote innovation through research and development through partnering between the private sector, universities and governmental research agencies. Additionally encourage technology transfer and domestic manufacturing and engineering to ensure jobs and resources benefit local communities. (8.2)

Create policies to encourage use of alternative energy, including tax credits, adapting building codes and other incentives, for energy efficient buildings and houses and to retrofit older ones. (7.9)

Increase public awareness through comprehensive education programs, including teaching materials, teacher workshops, public service announcements, and web sites to promote a reduction of usage petroleum products. (7.6)

Improving the Greater Houston Economy through Renewable Energy

White paper report for 2008 Action Summit – Pearland, TX

Introduction

The energy sector is headline news and has been at the top of the agenda for governments and a growing concern for everyone. The big questions are about energy security and global warming. Will we have enough energy for the future? And how can we use energy without impacting our climate?

Renewable energy utilizes our natural resources such as sunlight, wind, hydropower, natural gas, tides and geothermal heat and other resources such as our waste products. Renewable energy technologies range from solar, wind, low-carbon coal technology and hydroelectricity to biomass and biodiesel in order to generate energy for heat, light and mobility.

Our goal is to work together in new ways to develop new partnerships between business and policy makers to capture the benefits of energy security, economic growth, and environmental sustainability by promoting and rewarding low-carbon solutions. This committee will address some of the needs for promoting renewable energy, such as the need of renewable energy incentives and how to promote commercialization of affordable renewable and alternative energy. The following are the committee recommendations:

Renewable Energy Working Group Members

John Rose, City of Stafford
Working Group Chair

Darrel Thorson, BP Alternative Energy
Working Group Member

Louis D'Agostaro, BP Alternative Energy
Working Group Member

Promote Innovation in Renewable Energy

Renewable energy is sometimes criticized for being unreliable, unsightly, and expensive and the amount of its use is small in comparison to the total energy demand. To increase the demand

for renewable energy, we need to accelerate the development and deployment of technologies that can help reduce carbon emissions and ensure that appropriate incentives are introduced to enable these new technologies to scale up. For example:

- A federal renewable portfolio standard which would provide greater energy security, more sustainability and extra employment.
- Expansion of the current Production Tax Credit structure over a long time-frame and production incentives that encourage scaling up in wind power.
- The development of a national transmission grid to further unlock the potential for renewable energy projects across the US.
- Incentives that recognize the particular contribution of solar in off-setting the most expensive peak power rates – such as real time pricing.
- Incentives for biofuels that encourage advanced fuels by targeting performance in greenhouse gas reduction and energy content.
- Appropriate incentives for carbon capture and storage projects – such as including it in cap and trade systems and a drive to build commercial scale demonstration plants.

Promote Research Partnering between the Private Sector, Universities and Governmental Research Agencies

Improve tax credits, grants and other measures for members who partner in the development of new energy sources. Develop a renewable energy technology information clearing house (database) for sharing research information. By investing in each others research we can become closer to making clean, affordable alternative sources of energy a reality.

Increase Public Awareness on Renewable Energy

Develop a governmental Public Renewable Energy Awareness Program to educate the public on alternative energy sources and energy efficiency techniques and devices. Award grants to public schools that have classroom courses on uses of renewable energy and energy saving techniques. Create a central warehouse for renewable energy education materials to be distributed to educators. Materials should be in the form of lesson plans and classroom projects. Create workshops for teachers (workshop includes materials and items on renewable energy to be incorporated into classroom curriculum). Start a renewable energy educational website for teachers.

Conclusion

Biofuels, while beneficial, can only go so far because of their potential impact on the food industry as well as pressure they put on water and land.

Biodiesel is not an all or nothing product. Research has not been completed to determine what will happen to our planet if we change to an agricultural lifestyle. What changes to the environment will occur if we begin to farm all of our land? We still have not improved our farming practice to alleviate over-fertilization, pesticide use and land use conversion to farm land that would be needed to produce the amount of vegetable oil required to satisfy our needs. The farming industry must be made aware that research has to be conducted to alleviate the flaws in current farming practices before we allow them to pollute our environment. If research proves that we will have no side effects, we can then proceed forward.

Biofuels are not the answer to all our energy problems but it is one portion of renewable energy and in combination with others will allow us to conserve natural resources, reduce pollution, and minimize dependence on foreign sources to improve our lives.

Education

Recommendations -- (average response on a 10-point scale assessing impact; 1=lowest; 10=highest)

Federal government should be facilitators, not creators - offering incentives for business participants in education of students. Get them involved through outreach, communication and involvement in apprentice and education venues. Focus on critical skills, integrated, operation and organizational topics. (7.8)

There has to be seamless transition between each stage of education (middle school, high school, college, etc.) to eliminate remediation and preparation for the workforce. (7.2)

Give universities financial incentives to put Formula Funding back into the more expensive STEM programs. (7.1)

Federal government needs to address educated undocumented workers who graduate from high school or college who are still not legal to work in the U.S. (6.6)

Students to know by sixth grade what their family may be entitled to in the way of federal funding, i.e. grants, loans and other opportunities. Therefore they can plan and have goals to work toward. (6.4)

The Role of Education in Economic Development

White paper report for 2008 Action Summit – Pearland, TX

Introduction

What are the current employment needs in the Bay area?

High needs occupations heavily concentrated in STEM fields: Science, Technology, Engineering, and Mathematics.

- There are shortages of qualified personnel in almost every area of healthcare. Aging baby boomers will stress the existing workforce even farther.
- There are also current needs in technology and petro-chemical industries, and anticipated retirements over the next ten years will create a critical shortage of qualified employees in these industries.
- China adds 600,000 new engineers a year; the US, only 70,000. Even India, with 350,000 new engineers a year, is outdoing the US.
- Additionally, there are critical shortages of teachers at all levels, particularly in science and mathematics.

Education Working Group Members:

Maureen Murphy, San Jacinto College
Working Group Chair

Susie Allen, Harris County
Commissioner
Working Group Member

Paula Stansell, Houston Community College
Working Group Member

Jan Lawler, Economic Alliance Houston Port Region
Working Group Member

How does Texas fare in terms of educational attainment?

- Educational attainment levels in Texas are low; many schools are not making their Annual Yearly Progress in Reading, Mathematics, and Graduation rates under No Child Left Behind. Further, Texas schools are not meeting their own accountability standards.²
- No Child Left Behind standards have been criticized for being "one size fits all," lacking the flexibility to meet the needs of a diverse school population. All skills, talents, and abilities that cannot be reflected in a single test; moreover, standardized tests have been criticized as reflecting a middle class bias, thus putting low-income and minority students at a further disadvantage.
- According to the 2000 U.S. Census, of people age 25 and above, 23.2% had achieved a Bachelor's degree of higher, while 24.3% of the same age group did not graduate from high school. Of people ages 16-19, 12.5% are high school drop outs.

What are the costs of dropping out of high school?

Dropouts suffer from reduced earnings and lost opportunities; there is also a significant social and economic cost to the rest of the nation.

- Over the course of his or her lifetime, a high school dropout earns, on average, about \$260,000 less than a high school graduate (Rouse 2005).
- Dropouts from the Class of 2007 alone will cost the nation nearly \$329 billion in lost wages, taxes, and productivity over their lifetimes (Alliance for Excellent Education 2007).
- If the United States' likely dropouts from the Class of 2006 had graduated, the nation could have saved more than \$17 billion in Medicaid and expenditures for uninsured health care over the course of those young people's lifetimes (Alliance for Excellent Education 2006b).
- If U.S. high schools and colleges raise the graduation rates of Hispanic, African American, and Native American students to the levels of white students by 2020, the potential increase in personal income would add more than \$310 billion to the U.S. economy (Alliance for Excellent Education 2006a).
- Increasing the graduation rate and college matriculation of male students in the United States by just 5 percent could lead to combined savings and revenue of almost \$8 billion each year by reducing crime-related costs (Alliance for Excellent Education 2006c).

Who is dropping out?

Overall, far too many students are not graduating on time with a regular diploma; low-income and minority students fare the worst in the dropout epidemic.

- Each year approximately 1.23 million students fail to graduate from high school, more than half of whom are from minority groups (EPE 2007).³

What do we need?

- In short, we need a workforce both educated and trained in science, technology, healthcare, and education.
- Education is an economic development engine, in that companies look for areas with an educated work force and access to higher education as a positive when exploring relocation into a new area.⁴

² (<http://www.tea.state.tx.us/perfreport/account/2007/state.html>)

³ Alliance for Excellent Education, Factsheet Sept 2007

⁴ http://www.fortbendcounty.org/page_workforce_data_n_topics.

- Further, we need public policy which supports technical and vocational training as well as traditional college.
- Curriculum alignment, Pre-K through graduate degrees, is also critical. Students need seamless transitions from one level to the next. There also need to be clear alternative pathways for less academically inclined students which can lead to high-demand careers.
- Scholarships and other need-based support must be increased to enable low-income, first-generation, and minority students access to post-secondary education.⁵
- According to the College Board, people with a bachelor's degree will earn, on average, \$1 million more throughout their lifetimes than those with only a high school diploma.

Challenges

There is a need for funding mechanisms that reaches underserved population or non-traditional college bound students. According to Terry Long⁶,

“unlike earlier federal initiatives such as the need-based Pell Grant, these newer programs, initiated in the 1990s, are affecting affordability far more than access. In other words, they're benefiting students who are already college-bound..... They're not trying to introduce new people into the system, they're trying to make people who are already going to attend more comfortable with the expense.”⁷

There are additional issues with information on federal grants and aid being available to families early in a student's career. Most families begin looking for funding during a student's senior year, which is too late. Getting information to students and families earlier, allows for planning, course selection, and academic goal setting which will enable students to make academic choices that will help qualify them for financial aid.

Families must also be educated on the cost of college and affordable options, such as community colleges, since the costs are less, but the benefit to earnings over a lifetime are huge.

Conclusion

According to Long “Broadening access to a college education does more than line graduates' pockets with an extra million bucks... more productive, educated earners benefit everyone. Several alternatives to a well-educated workforce - public assistance or jail - actually cost society dearly.”⁸

⁵ (Who goes to college - <http://harvardscience.harvard.edu/node/3411>)

⁶ <http://www.news.harvard.edu/gazette/2003/09.25/13-terrylong.html>

⁷ Ibid.

⁸ Ibid.

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